

AMENDMENT UNDER 37 C.F.R. § 1.111
Application Serial No. 10/666,264
Attorney Docket No. Q90171

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): A method of forming a weld between plastics workpieces over a joint region, the method comprising:

 providing a radiation absorbing material at the joint region that has an absorption band in the range 780-1500 nm matched to a wavelength of incident radiation so as to absorb the incident radiation and generate heat, the wavelength of the incident radiation being outside the visible range;

 exposing the joint region to incident radiation so as to cause melting of the surface of at least one workpiece at the joint region;

 allowing the melted material to cool so as to weld the workpieces together;

 wherein the workpieces include a first workpiece and a second workpiece, the first workpiece being any one of clear to translucent, the second workpiece being any one of tinted to opaque, and the radiation absorbing material being a radiation absorbing dye that is visually transmissive when the workpieces are welded together and when viewed through the first workpiece.

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2. (original): A method according to claim 1, wherein the radiation absorbing material is sandwiched between two workpieces.

3. (original): A method according to claim 1, wherein the radiation absorbing material is provided in at least one of the workpieces.

4. (original): A method according to claim 1, wherein the radiation absorbing material is provided on the substrate by moulding the substrate in a mould with an insert formed by or including the radiation absorbing material.

5. (original): A method according to claim 1, wherein the radiation absorbing material is provided as a coating on the substrate.

6. (original): A method according to claim 1, wherein the radiation absorbing material is provided by coextruding the material with the substrate.

7. (previously presented): A method according to claim 1, wherein the radiation absorbing material is exposed to radiation prior to positioning the workpieces together.

8. (previously presented): A method according to claim 1, wherein the radiation absorbing material is exposed to radiation through one of the workpieces.

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9-11. (canceled).

12. (previously presented): A method according to claim 1, wherein the absorption band defines the range 780-1100 nm.

13. (previously presented): A method according to claim 1, wherein the absorption band defines the range 820-860 nm.

14. (canceled).

15. (previously presented): A method according to claim 1, wherein the absorption band does not include the range 400-700 nm.

16. (canceled).

17. (previously presented): A method according to claim 1, wherein the wavelength of the incident radiation lies in the range 700-2500 nm.

18. (original): A method according to claim 17, wherein the wavelength of the incident radiation lies in the range 790-860 nm.

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19. (original): A method according to claim 17, wherein the wavelength of the incident radiation lies in the range 940-980 nm.

20. (previously presented): A method according to claim 1, wherein the radiation is a laser beam.

21. (previously presented): A pair of workpieces which have been welded by a method according to claim 1.

22. (previously presented): A method according to claim 1, wherein the workpieces comprise fabrics.

23. (previously presented): A method according to claim 22, wherein the fabrics are nylon-based fabrics.

24. (previously presented): A method according to claim 22, wherein the fabrics are polyurethane coated.

25. (previously presented): A method according to claim 22, wherein the fabrics comprise polyamide/polytetrafluoroethylene laminated fabrics.

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26. (canceled).
27. (previously presented): A method according to claim 1, wherein the workpieces are made of thermoplastic.
28. (previously presented): A method according to claim 27, wherein the thermoplastic workpieces are textiles.
29. (previously presented): A method according to claim 1, wherein the workpieces are thermoplastic films.
30. (previously presented): A method according to claim 1, wherein the radiation absorbing dye is a radiation absorbing organic dye.
31. (previously presented): A method according to claim 30, wherein the radiation absorbing organic dye is a cyanine dye.
32. (previously presented): A method according to claim 30, wherein the radiation absorbing organic dye is a squarylium dye.

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33. (previously presented): A method according to claim 30, wherein the radiation absorbing organic dye is a croconium dye.

34. (previously presented): A method according to claim 1, wherein the wavelength of the incident radiation that is exposed to the joint region is in the range of 700-2500 nm, and the absorption band of the radiation absorbing dye, which is matched to the incident radiation, is in the range of 750-1100.

35. (new): A method according to claim 1, wherein the radiation absorbing material is a radiation absorbing organic dye that is dissolved in use.